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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 14

Application Number: 09/707,710
Filing Date: November 07, 2000
Appellant(s): KORN ET AL.

J. Grant Houston
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 7, 2003.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 6-8, 10, 12, 13, and 16-19 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. The rejection of claims 9, 11, and 14-15 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

4673244	MILES	6-1987
6345059	FLANDERS	2-2002

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims rejected under 35 U.S.C. 102 and 35 U.S.C. 103. This rejection is set forth below.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 6-8, 10, 12-13, and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Miles (U.S. Patent No. 4,673,244).

Miles discloses a process for manufacturing a semiconductor laser that requires installing the chip (fig. 4, ref. 120) in a package, inserting and securing a polarization-maintaining optical fiber through the ferrule and feedthrough (col. 3, lines 41-43), aligning the endface to the energized semiconductor chip (col. 4, lines 4-6) and detecting the polarization extinction ratio (PER) of light transmitted through the fiber from the semiconductor chip (fig. 3), and then axially rotating the enface of the fiber to maximize the PER through detection on a slow or fast path or axis (fig. 3). Miles also teaches a process of securing the fiber on the mounting structure by sealing around the fiber, before or after axial rotation adjustments (col. 5, lines 39-51).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 9, 11, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miles in view of Flanders (U.S. Patent No. 6,345,059).

Miles discloses a process for manufacturing a semiconductor laser as recited above. Miles teaches the use of a mounting structure to which the fiber endface is secured and where axial fiber rotation and PER maximization can be performed (fig. 3). However, Miles does not specifically teach a mounting structure that is deformable.

Flanders discloses a deformable mounting structure (col. 4, lines 41-44) that enables active and passive alignment during system manufacture or calibration after an in-service period (col. 4, lines 41-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a deformable mounting structure since one would be motivated to further maximize PER during the process of manufacture of the semiconductor laser device (col. 4, lines 41-44). A deforming structure allows fibers that are already aligned and secured to be readjusted so that PER can be enhanced until a desired ratio level is reached (col. 4, lines 41-44). And this is important because, according to Miles, the level of optimally desired PER relates directly to the quality of the laser light that will emerge from the fiber. If the PER is optimized, even when the fiber is shortened, the light that is outputted will be high quality, linearly polarized light that is independent of fiber length and is therefore, highly useful for designed application (col. 5, lines 52-62).

(11) Response to Argument

Appellant has two main arguments: (1) that the prior art of record does not teach a method of first securing the endface of the fiber, then detecting a polarization extinction ratio in accordance to the specifics of Claim 6 and (2) that the prior art of record does not disclose a method with the aligning steps comprising "plastically deforming a mounting structure to which the optical fiber is secured" in accordance with the specifics of Claim 9.

Appellant's first argument is that the prior art of record does not disclose a method of first securing the endface of the fiber, then detecting the polarization extinction ratio in accordance to the specifics of Claim 6. For support that the Miles reference does not anticipate this teaching, Appellant refers to Col. 3, line 57 as being the initial rough alignment followed by Col. 4, line 22 as being the fine alignment, and then refers to Col. 5, line 21 as being the part where "all that remains is to attach the fiber to the laser."

Appellant apparently contends that the fiber is secured after the alignment steps. However, Examiner seeks to draw a distinction between between "secured" and "attached." The limitation in Claim 6 merely recites "securing an endface of the optical fiber to the package to receive light by the semiconductor chip." The claim is about attachment, to which Col. 5, line 21 refers. In fact, one would clearly recognize that Miles discloses "securing an endface of the optical fiber to the package to receive light by the semiconductor chip" in Col. 3, lines 39-56. Here, "the fiber is placed in the ferrule" (col. 3, line 45, 48-49) and the "fiber end cased in ferrule is placed in jig" (col. 3, line 52-53). It is after this "securing" step that the fiber is rotated for the initial rough alignment (col. 4, line 22).

Furthermore, Appellant's interpretation of the Miles reference attaching the fiber to the laser (col. 5, line 25-26) and bonding the ferrule to the submount platform (col. 5, lines 30-31) is not persuasive. Appellant appears to interpret these steps as the "securing" step. While Miles teaches these specifics, the present claim merely recites "securing" the fiber. The claim is silent to any type of attachment or mounting of the

ferrule. Therefore, Examiner believes the Miles reference is sufficient in teaching this limitation before the alignment step of detecting a polarization extinction ratio.

In Appellant's second argument, Appellant acknowledges that Miles is deficient in teaching "plastically deforming a mounting structure to which the optical fiber is secured" and admits that Flanders teaches such deformable alignment structures (Appellant's Brief, pg. 4, line 27). However, Appellant argues that the deformable alignment structures found in Flanders are used for x and y axis adjustment. Appellant also alleges that because that Flanders fails to address polarization extinction, that the entire reference is unusable in combination with the Miles reference.

Appellant's argument is based on a teaching that is not found in the claimed invention. In Claim 9 of Appellant's invention, there is no mention of any polarization extinction. In addition, Examiner asserts that the Flanders reference teaches "deformable mounting structures [that] are used to enable active or passive alignment" (col. 4, lines 41-44). Because Flanders' concern for alignment parallels Miles' concern, one of ordinary skill in the art would recognize that detecting a polarization extinction would be obvious for achieving active or passive alignment since a deforming structure allows fibers that are already aligned and secured to be readjusted (col. 4, lines 41-44). According to Miles, the level of optimally desired PER relates directly to the quality of the laser light that will emerge from the fiber. Therefore, if the PER is optimized, even when the fiber is shortened, the light that is outputted will be high quality, linearly polarized light that is independent of fiber length and is therefore, highly useful for designed application (col. 5, lines 52-62).

Therefore, for the above reasons, it is believed that prior art of record is sufficient and valid in their teachings and that the rejections should be sustained.

Respectfully submitted,

George Wang
September 22, 2003

Conferees

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